



## AIR LINE PILOTS ASSOCIATION, INTERNATIONAL

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Comments submitted electronically

May 23, 2005

Federal Communications Commission  
445 12<sup>th</sup> Street, SW  
Washington, DC 20554

Subject: WT Docket Number: 04-435, FCC 04-288; Amendment of the Commission's Rules to Facilitate the Use of Cellular Telephones and other Wireless Devices Aboard Airborne Aircraft.

Ladies and Gentlemen:

The Air Line Pilots Association, International (ALPA), representing the safety and security interests of 64,000 professional airline pilots flying for 41 passenger and cargo airlines in the United States and Canada, has reviewed the Federal Communications Commission's (FCC) Notice of Proposed Rulemaking (NPRM) to replace or relax its ban on airborne usage of 800 MHz cellular handsets, as well as to propose other steps to facilitate the use of wireless handsets and devices, including those used for broadband applications on airborne aircraft in appropriate circumstances. We understand Section 22.925 of the Commission's rules currently prohibits the airborne use of 800 MHz cellular telephones, including the use of such phones on commercial and private aircraft.<sup>1</sup> Also, while Personal Communications Services (PCS) under Part 24 and Wireless Communications Services (WCS) under Part 27 are not subject to an airborne use prohibition by Commission rules, regulations promulgated by the Federal Aviation Administration (FAA) prohibit the use of all types of mobile telephones, as well as other portable electronic devices (PEDs) on aircraft, unless the aircraft operator has determined that the use of the PED (including mobile/cellular telephones) will not interfere with the aircraft's aviation navigation and communication systems.

Because of a number of issues, ALPA believes that before the FCC acts on this NPRM, it first should coordinate any rulemaking involving airborne use of PEDs with the FAA. Then, a simultaneous and coordinated release of the new rules from the FAA and FCC should be made.

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<sup>1</sup> See 47 C.F.R. § 22.925. The rule reads in its entirety as follows:

Cellular telephones installed in or carried aboard airplanes, balloons or any other type of aircraft must not be operated while such aircraft are airborne (not touching the ground). When any aircraft leaves the ground, all cellular telephones onboard that aircraft must be turned off. The following notice must be posted on or near each cellular telephone installed in any aircraft:

"The use of cellular telephones while this aircraft is airborne is prohibited by FCC rules, and the violation of this rule could result in suspension of service and/or a fine. The use of cellular telephones while this aircraft is on the ground is subject to FAA regulations."

ALPA has a number of concerns about issuing any rules concerning airborne PED operations at this time. ALPA has been actively involved for the past two years with work being conducted by a Special Committee of the RTCA, Inc., concerning the technical aspects of the aircraft problems posed by FCC Part 22.925 (800 MHz) band devices and other PEDs. We are aware that a number of technical issues still require resolution before active airborne use of mobile phone services can be safely implemented. In addition, the FAA and the FCC collectively need to consider other issues beyond the technical concerns of aircraft systems and interference with terrestrial cell towers. ALPA maintains that before the ban is lifted, additional studies involving safety, security, regulatory and cabin environment (human factors) concerns must be completed and those issues must be satisfactorily resolved. Due to the considerable amount of research still to be conducted, ALPA believes that a unilateral FCC rulemaking at this time could be counterproductive, creating confusion for the traveling public and the media. We further advocate that when the new rules are promulgated, similar wireless systems covered by FCC Part 24 (1900MHz band) and FCC Part 90 (land mobile radio, IDEN/Nextel), commonly understood by the public as “mobile phones,” also should be included in a uniform manner.

We discuss some of the unresolved issues related to the NPRM in greater detail below.

#### **Technical Issues:**

Results of current testing conducted by federal agencies (i.e., the FAA, the National Aeronautics and Space Administration [NASA]) and other industry experts have shown that commercial aircraft radio systems are sometimes susceptible to RF interference from consumer electronics such as those affected by this NPRM.

We note, for example, that prior to the implementation of the policy permitting passengers to use cell phones after landing, in some cases aircraft modifications or special aircrew workaround procedures were necessary. Moreover, additional testing is still being conducted to determine if a single device or multiple devices transmitting simultaneously will cause an adverse effect on any system on any aircraft type. This research can be time-consuming and involved. For example, testing sometimes needs to be conducted on several models of a given aircraft type because different radio and electronic suites may have varying levels of susceptibility.

We also note that portable electronic device radio technologies differ not only in the U.S. but also internationally, including cases of geographically specific frequency assignments. Cell phones and other wireless devices can house different technologies in very similar exterior packaging, making aircrew determination of device acceptability or compatibility impossible. This also makes testing more complex, as well, because the presence of such overseas equipment cannot be discounted even on purely domestic flights.

The basis for envisioned airborne cell phone use rests with the ability of the cellular base station installed onboard the aircraft, which is being called the “pico cell,” to foster low cell phone wattage output. Certification engineering criteria of onboard wireless systems being considered

must be completed to accommodate use of the technology and should include a failure modes analysis. As stated in the NPRM, failure of some of the proposed pico cell systems could actually increase the possibility of RF interference as the onboard cell phones would then increase their power output to maximum levels. This could impact the safety of flight operations while airborne and on the ground. As a result, the certification and operating criteria must address the possibility of multiple wireless devices transmitting on full power while they attempt to find a station. It should be noted that pico cell failure and the sudden full-power operation of many airborne RF radiating devices could also interfere with terrestrial systems operating under FCC ground authorizations.

The NPRM references permitting “off the shelf” devices to be used, but given the after-market changes available, there is no definite way to verify that a specific device’s actual technology will be problem-free without testing it. There is no reference provided as to who would be required to make the technical determination to ensure that only appropriate devices are used and how they would be labeled or otherwise identified. It may be impossible to make that assessment just by looking at the device. ALPA opposes any policy that requires flight attendants, pilots, or any other airline personnel to ensure that passengers are only using accepted technology.

#### **Cabin Environment (human interaction factors):**

We point out that commuter trains in the Northeast now offer “quiet cars” due to passenger demands for an oasis free of cell phone conversations. Such an option probably cannot be offered in the more confined and weight-limited environment of transport aircraft. As a consequence, if cell phones are permitted to be used in flight, flight attendants could more frequently be put into positions requiring adversarial interaction with passengers due to the increased potential for arguments or disputes. The overall cabin atmosphere may more frequently deteriorate to unacceptable levels, perhaps even to the point of affecting the safety of all occupants.

#### **Security:**

From a security standpoint, ALPA questions the NPRM’s assertion that the approval of wireless technology provides a benefit to homeland security. ALPA is also involved with efforts in the security area, and, to our knowledge, this assertion has not been formally adopted by the appropriate security agencies. Without going into specifics, this technology could actually be exploited by terrorists to harm aviation security, negating any benefits to law enforcement.

#### **Regulatory Issues:**

Perhaps as never before, the proposal to permit actively transmitting PEDs in flight enters new regulatory territory that overlaps both FCC and FAA responsibilities and interests. However, the NPRM does not satisfactorily establish, define, or clearly delineate the roles and responsibilities between the FCC and the FAA in the governance of airborne wireless technology. ALPA does not believe that a satisfactory airborne cell phone policy can be implemented without close cooperation of both agencies.

Current FAA regulations require that the air carrier determine that any approved portable electronic device will not interfere with aircraft systems. While this may have been an acceptable policy in the past, the rapid pace of change of wireless technology requires that this policy be reviewed. FAA regulations currently do not specify what testing must take place for airworthiness, although the activities of RTCA SC-202 may enable the FAA to develop such rules at a future date.

The NPRM is unclear as to the FCC's position regarding the rigor of its Type Approval process for pico cell equipment relative to the equipment and system interference characteristics that impact aircraft systems. However, the FCC is responsible for controlling interference between different radio services. Many aircraft communication and navigation systems are radio-based and just as worthy of protection as ground-based systems. It may turn out that protection of the radio-based and other airborne electronic equipment will require FCC revisions to Part 15 rules, but the RTCA-sponsored and -monitored research is still not mature enough to support solid recommendations at this time.

**Summary:**

In summary, ALPA strongly encourages a coordinated FAA and FCC effort to develop harmonized regulations concerning airborne use of PEDs, including mobile telephones and other actively transmitting services. The RTCA's final report on these issues is not due until the end of 2006, and the FAA is unlikely to make regulatory changes before that point. Thus, ALPA believes that it is very premature to consider lifting the current ban on in-flight use of cell phones or other wireless technology well before all of the concerns noted above are adequately addressed.

Sincerely,

A handwritten signature in black ink, appearing to read "Richard D. Kessel". The signature is fluid and cursive, with the first name "Richard" and last name "Kessel" clearly distinguishable.

Richard D. Kessel  
Staff Engineer  
Engineering and Air Safety Department

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